



# Algebra 1

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STANDARDS	PAGE REFERENCES
<b>Number and Operations</b>	
<b>1. Understand numbers, ways of representing numbers, relationships among numbers and number systems</b>	
<b>A Read, write and compare numbers</b>	
compare and order rational and irrational numbers, including finding their approximate locations on a number line	<b>Student Edition:</b> P7-P10, P11-P12, P13-P16, 103-109, 283-288, 302, 303, 304-309, 310-314 <i>Algebra Lab</i> 303 <i>Study Tip</i> P8, P9, P10, P12, P14, P15 <b>Teacher Edition:</b> AE P7-P9, P11-P12, P13-P16, 104-105, 285, 305-306
<b>B Represent and use rational numbers</b>	
use real numbers and various models, drawing, etc. to solve problems	<b>Student Edition:</b> P7-P10, 25, 60-61, 81-82, 90, 169, 194, 289, 303, 423, 431-432, 445-446, 475, 483-484, 536, 662-663 <i>Algebra Lab</i> 60-61, 81-82, 90, 169, 194, 289, 303, 423, 431-432, 445-446, 475, 483-484, 536 <i>Problem-Solving Tip</i> 25 <i>Study Tip</i> P10

STANDARDS	PAGE REFERENCES
<b>C Compose and decompose numbers</b>	
*use a variety of representations to demonstrate an understanding of very large and very small numbers	<b>Student Edition:</b> 10-15, 401-407, 408-415, 416-422, 429, 430, 438, 460-461, 463, 464-465, 467 #11, 618 <i>Graphing Technology Lab</i> 618 <b>Teacher Edition:</b> AE 403, 412, 417-418; DI 417, 420; FMC 418; SQ 416; SN 417; TNT 418, 419; WO 420
<b>D Classify and describe numeric relationships</b>	
2. Understand meanings of operations and how they relate to one another	
<b>A Represent operations</b>	
<b>B Describe effects of operations</b>	
*describe the effects of operations, such as multiplication, division, and computing powers and roots on the magnitude of quantities	<b>Student Edition:</b> 10-15, 401-407, 408-415, 416-422, 429, 430, 460-461, 463, 464-465, 467 #11, 567-572, 573-577, 612-617, 618 <i>Graphing Technology Lab</i> 618 <b>Teacher Edition:</b> AE 403, 412, 417-418; DI 417, 420; FMC 418
<b>C Apply properties of operations</b>	
<b>D Apply operations on real and complex numbers</b>	
*apply operations to real numbers, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases	<b>Student Edition:</b> P7-P10, P11-P12, P13-P16, P17-P19, P20-P22, 10-15, 16-22, 23-29, 30, 31-37, 63-65, 67, 83-89, 90, 91-96, 97-102, 103-109, 111-117, 119-124, 125, 126-131, 133-138, 140-144 <i>Algebra Lab</i> 90, 125 <i>Study Tip</i> 24
3. Compute fluently and make reasonable estimates	
<b>A Describe or represent mental strategies</b>	
<b>B Develop and demonstrate fluency</b>	
<b>C Compute problems</b>	

STANDARDS	PAGE REFERENCES
<b>D Estimate and justify solutions</b>	
*judge the reasonableness of numerical computations and their results	<b>Student Edition:</b> P7-P10, P11-P12, P13-P16, P17-P19, 68-69, 81-82, 83-89, 291-295, 394-395, 416-422, 537-542, 552-557, 558-564, 566, 630-635, 636-641, 720-726, 730 <i>Algebra Lab</i> 81-82 <i>Study Tip</i> P18, 721, 722 <i>Vocabulary Link</i> 721
<b>E Use proportional reasoning</b>	
*solve problems involving proportions	<b>Student Edition:</b> P20-P22, 111-117, 119-124, 142-143, 145, 195-200, 204, 643-647, 655, 660, 661, 670-676 <i>Study Tip</i> P21, 112, 113, 671 <b>Teacher Edition:</b> AE P20-P21, 112-114, 120-121, 196-197; DI 114, 117; FMC 112
<b>Algebraic Relationships</b>	
<b>1. Understand patterns, relations and functions</b>	
<b>A Recognize and extend patterns</b>	
<b>B Create and analyze patterns</b>	
generalize patterns using <u>explicitly</u> or <u>recursively</u> defined functions	<b>Student Edition:</b> 170-178, 179, 180-186, 187-193, 194, 195-200, 204, 205, 261-268, 269, 525-535, 544-549, 566, 567-572, 573-577, 578-583, 584-589, 590-591, 595-596, 597, 680 <i>Algebra Lab</i> 194 <i>Graphing Technology Lab</i> 269, 590-591
<b>C Classify objects and representations</b>	
compare and contrast various forms of <u>representations</u> of patterns	<b>Student Edition:</b> 153-159, 161-166, 187-193, 194, 195-200, 204, 205, 261-268, 269, 569-572, 573-577, 578-583, 584-589, 590-591, 595-596 <i>Algebra Lab</i> 194 <i>Graphing Technology Lab</i> 269, 590-591 <b>Teacher Edition:</b> AE 188-189, 196-197, 570-571, 574-575

STANDARDS	PAGE REFERENCES
<b>D Identify and compare functions</b>	
understand and compare the properties of <u>linear</u> and <u>nonlinear functions</u>	<p><b>Student Edition:</b> 153-169, 161-166, 170-178, 187-193, 195-200, 202-204, 214-221, 222-223, 231-236, 237-243, 244, 245-251, 261-268, 269, 271-274, 544-549, 584-589, 590-591, 596, 670-676, 680</p> <p><i>Graphing Technology Lab</i> 222-223, 269, 590-591</p> <p><b>Teacher Edition:</b> AE 545-546; DI 549; FMC 546; TNT 547</p>
<b>E Describe the effects of parameter changes</b>	
describe the effects of <u>parameter changes</u> on <u>linear, exponential growth/decay</u> and <u>quadratic functions</u> including intercepts	<p><b>Student Edition:</b> 169, 170-178, 179, 180-186, 261-268, 269, 525-535, 544-549, 567-572, 573-577</p> <p><i>Algebra Lab</i> 169</p> <p><i>Graphing Technology Lab</i> 269</p> <p><i>Study Tip</i> 545</p> <p><i>Watch Out!</i> 546</p> <p><b>Teacher Edition:</b> AE 171-174, 527-528, 545-546; DI 549; FMC 528, 546; TNT 547</p>
<b>2. Represent and analyze mathematical situations and structures using algebraic symbols</b>	
<b>A Represent mathematical situations</b>	
use <u>symbolic algebra</u> to represent and solve problems that involve linear and quadratic relationships including equations and inequalities	<p><b>Student Edition:</b> 31-37, 75-80, 89, 92-96, 102, 110, 132-138, 140-141, 144, 285-289, 291-295, 296-301, 302, 305-309, 323-324, 325, 326-327, 495-497, 509-511, 544-549, 584-589, 596</p> <p><i>Study Tip</i> 93</p> <p><b>Teacher Edition:</b> AE 76-77, 92-93</p>
<b>B Describe and use mathematical manipulation</b>	
describe and use algebraic manipulations, including factoring and rules of integer exponents and apply <u>properties of exponents</u> (including order of operations) to simplify expressions	<p><b>Student Edition:</b> 10-15, 16-22, 23-29, 30, 45-52, 75-80, 401-407, 408-415, 416-422, 460-461, 462, 471-474, 475, 476-482, 483-484, 485-491, 492, 493-498, 499-504, 505-512, 514-516, 517, 518-519, 520</p> <p><i>Algebra Lab</i> 475, 483-484</p>

STANDARDS	PAGE REFERENCES
<b>C Utilize equivalent forms</b>	
use and solve equivalent forms of equations (linear, absolute value, and quadratic)	<b>Student Edition:</b> 38-44, 45-52, 53, 153-160, 161-166, 187-193, 195-200, 214-221, 222-223, 224-230, 231-236, 237-243, 244, 251, 260, 262-268, 269, 271-272, 275, 488-490, 537-541, 544-549, 558-563 <i>Graphing Technology Lab</i> 53, 222-223, 269
<b>D Utilize systems</b>	
use and solve systems of linear equations or inequalities with 2 variables	<b>Student Edition:</b> 333-339, 340-341, 342-347, 348-354, 355-360, 361, 362-367, 375, 376-381, 382-386, 387, 389-392, 393, 394-395, 396, 407, 415, 550-551 <i>Graphing Technology Lab</i> 340-341, 387, 550-551
<b>3. Use mathematical models to represent and understand quantitative relationships</b>	
<b>A Use mathematical models</b>	
identify quantitative relationships and determine the type(s) of functions that might model the situation to solve the problem	<b>Student Edition:</b> 126-131, 132-138, 143-144, 146-147, 187-193, 195-200, 222-223, 245-251, 253-260, 261-268, 273-274, 275, 537-542, 544-549, 567-572, 573-577, 578-583, 584-589, 590-591, 595-596, 670-676, 680, 732-733 <i>Graphing Technology Lab</i> 222-223, 590-591
<b>4. Analyze change in various contexts</b>	
<b>A Analyze change</b>	
analyze linear and quadratic functions by investigating rates of change, intercepts and zeros	<b>Student Edition:</b> 153-160, 161-166, 167-168, 169, 170-178, 179, 180-186, 187-193, 195-200, 202-204, 205, 215-221, 224-230, 525-535, 536, 537-542, 558-564 <i>Algebra Lab</i> 536 <i>Graphing Technology Lab</i> 167-168 <i>Study Tip</i> 538, 539 <i>Watch Out!</i> 538

STANDARDS	PAGE REFERENCES
<b>Geometric and Spatial Relationships</b>	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric	
A Describe and use geometric relationships	
B Apply geometric relationships	
*apply geometric properties such as similarity and angle relationship to solve multi-step problems in 2 dimensions	<b>Student Edition:</b> P23-P25, P26-P28, 69-72, 233, 236, 237-243, 244, 260 #28, 272, 275, 333-339, 440-443, 621-623, 630-635, 636-641, 642-647, 648, 649-655, 659-660, 661, 662-663, 798-799 <i>Algebra Lab</i> 648 <i>Study Tip</i> 233, 239, 643
C Compose and decompose shapes	
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
A Use coordinate systems	
3. Apply transformations and use symmetry to analyze mathematical situations	
A Use transformations on objects	
B Use transformations on functions	
C Use symmetry	
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
A Recognize and draw three-dimensional representations	
B Draw and use visual models	
*draw or use <u>visual models</u> to represent and solve problems	<b>Student Edition:</b> P23-P25, P26-P28, P29-P30, P31-P32, 60-61, 81-82, 90, 169, 194, 289, 303, 423, 431-432, 445-446, 475, 483-484, 536, 662-663, 798-799 <i>Algebra Lab</i> 60-61, 81-82, 90, 169, 194, 289, 303, 423, 431-432, 445-446, 475, 483-484, 536
<b>Measurement</b>	
1. Understand measurable attributes of objects and the units, systems and processes of measurement	
A Determine unit of measurement	
B Identify equivalent measures	
C Tell and use units of time	
D Count and compute money	

STANDARDS	PAGE REFERENCES
<p><b>2. Apply appropriate techniques, tools and formulas to determine measurements</b></p> <p><b>A Use standard or non-standard measurement</b></p> <p><b>B Use angle measurement</b></p> <p><b>C Apply geometric measurements</b></p> <p><b>D Analyze precision</b></p>	
<p>*describe the effects of operations, such as multiplication, division and computing powers and roots on magnitudes of quantities and effects of computation on <u>precision</u> which include the judging of reasonable of numerical computations <u>and their results</u></p>	<p><b>Student Edition:</b>  10-15, 68-69, 401-407, 408-415, 416-422, 429, 430, 567-572, 573-577, 578-583, 584-589, 595-596, 597, 612-617, 618, 619-623  <i>Graphing Technology Lab</i> 618  <i>Problem-Solving Tip</i> 417</p> <p><b>Teacher Edition:</b>  AE 69, 403, 412, 417-418, 574-575</p>
<p><b>E Use relationships within a measurement system</b></p>	
<p>*use <u>unit analysis</u> to solve problems</p>	<p><b>Student Edition:</b>  128-131, 134-138, 143-144, 145, 693-697, 709-713, 715-719, 722-726, 730, 731, 732-733, 820, 846, 855</p> <p><b>Teacher Edition:</b>  AE 128, 134-135, 693, 709, 715, 723, 733</p>
<p><b>Data and Probability</b></p>	
<p><b>1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them</b></p>	
<p><b>A Formulate questions</b></p>	
<p>formulate questions and collect data about a characteristic which include <u>sample spaces</u> and distributions</p>	<p><b>Student Edition:</b>  739, 740-745, 746-755, 756-762, 763, 780-784, 794-795, 797  <i>Algebra Lab</i> 739  <i>Study Tip</i> 741, 758, 759  <i>Watch Out!</i> 747</p> <p><b>Teacher Edition:</b>  AE 741-742, 747-749, 757-759; DI 742, 745, 752, 762; FMC 747; SQ 746; TT 739</p>
<p><b>B Classify and organize data</b></p>	

STANDARDS	PAGE REFERENCES
<b>C Represent and interpret data</b>	
select and use appropriate graphical representation of data and given <u>one-variable quantitative data</u> , display the distribution and describe its shape	<b>Student Edition:</b> P40-P43, P45, 9 #51, 753-754 <i>Study Tip</i> P42, P43 <b>Teacher Edition:</b> AE P40-P42; FA P43; TWT P42; WO P43; YN P43
<b>2. Select and use appropriate statistical methods to analyze data</b>	
<b>A Describe and analyze data</b>	
apply statistical measures of center to solve problems	<b>Student Edition:</b> P37-P39, 9, 29, 746-755, 756-762, 763, 770, 794-795, 797, 843, 856 <i>Study Tip</i> P38, P39 <b>Teacher Edition:</b> AE P37-P38, 747, 758; FA P39; NTM P39; SQ 756; TNT P39
<b>B Compare data representations</b>	
<b>C Represent data algebraically</b>	
given a scatterplot, determine an equation for a <u>line of best fit</u>	<b>Student Edition:</b> 245-251, 252, 253-260, 268, 273, 275 <i>Algebra Lab</i> 252 <i>Reading Math</i> 247 <i>Study Tip</i> 246, 255 <b>Teacher Edition:</b> 246-247, 254-255; DI 246, 249, 255, 258; FMC 247, 254; SQ 245, 253; TNT 255; WCG 252; WO 248
<b>3. Develop and evaluate inferences and predictions that are based on data</b>	
<b>A Develop and evaluate inferences</b>	
make <u>conjectures</u> about possible relationships between 2 characteristics of a sample on the basis of scatter plots of the data	<b>Student Edition:</b> 175, 213, 245-251, 252, 253-260, 268, 273, 564, 610 #65 <i>Algebra Lab</i> 252 <i>Graphing Technology Lab</i> 213 <i>Study Tip</i> 255 <b>Teacher Edition:</b> AE 246-247, 254-255; DI 246, 249, 258; FCA 252; TNT 255; TT 252; WCG 252

STANDARDS	PAGE REFERENCES
<b>B Analyze basic statistical techniques</b>	
<b>4. Understand and apply basic concepts of probability</b>	
<b>A Apply basic concepts of probability</b>	
<b>B Use and describe compound events</b>	